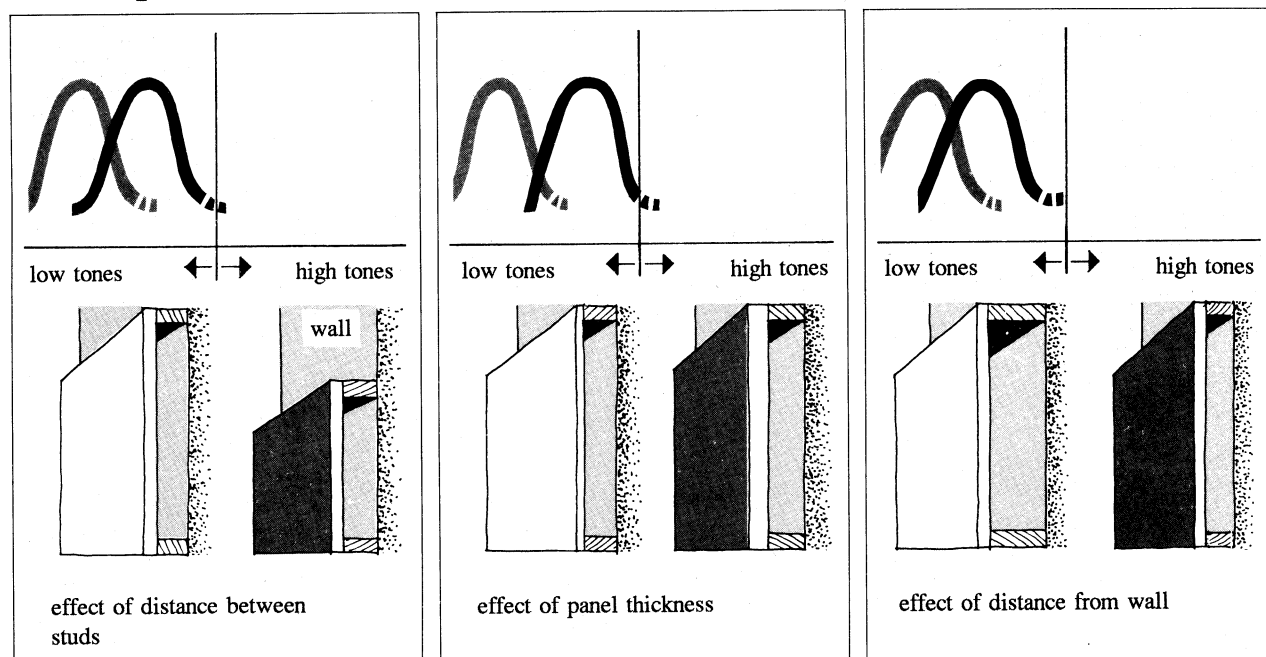


PANELS ON STUDS ABSORB LOW FREQUENCIES

Thin panels, fastened to a system of studs, absorb low frequencies. The absorption is effective over a narrow frequency range. This range is determined by the stiffness of the panels and the distance between the studs. If the panels are fastened to studs on a wall, the distance from the wall also has an effect. A panel with large internal damping absorbs over a wider frequency range.

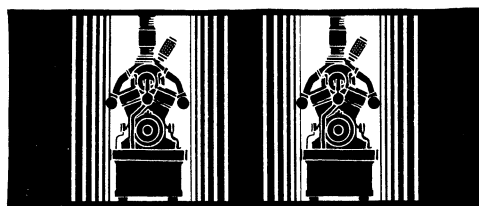
Principle



Application in a machine room with loud low-frequency noise

Example

Low-frequency resonance in an engine test room produced a very loud tone near the walls and in the center of the room. When the engine rotation speed was changed significantly, the tone disappeared completely.



Control Measure

The walls were covered with panels on studs to provide the greatest absorption in the frequency range of the loudest tone. In order for the sound absorptive material to continue to function even in the case of slight variations from the normal rotation speed, a layer with good internal damping was used, which provided a wider frequency range with good absorption. As a result, the resonance and the loud tone disappeared.

